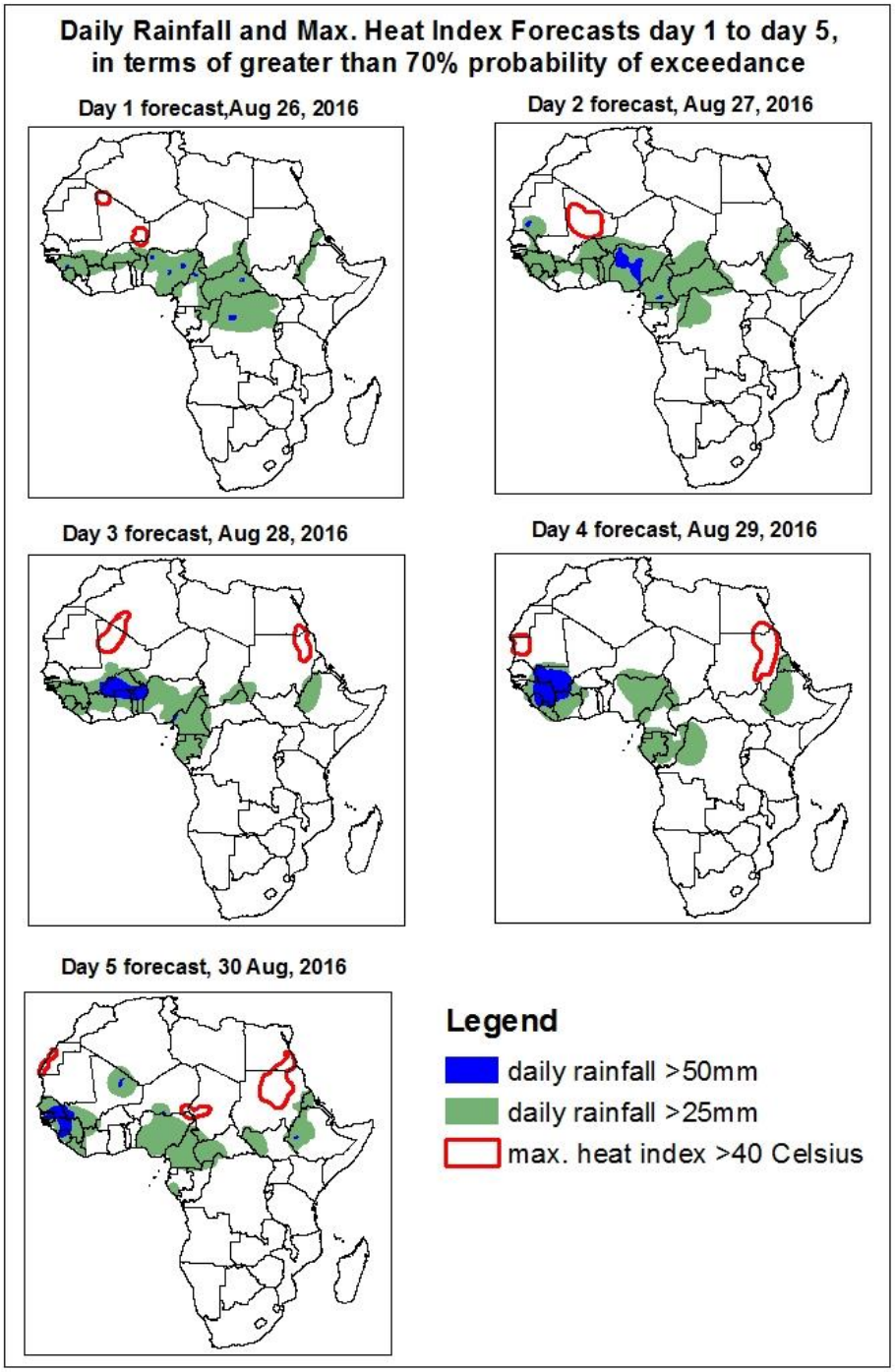
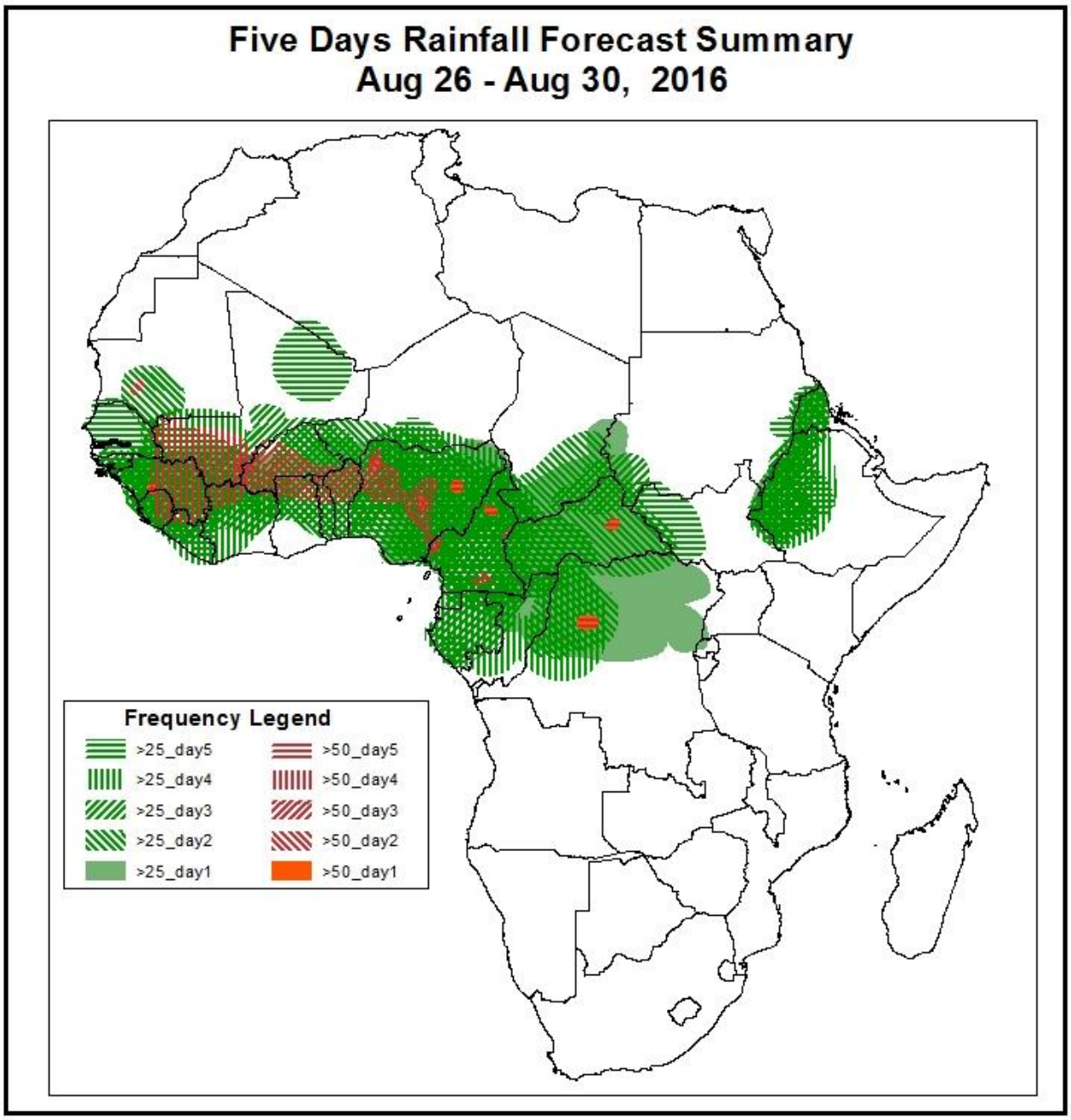
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on Aug 25, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: Aug 26– Aug 30 2016)*

The forecasts are expressed in terms of high probability of precipitation (POP) and high probability of maximum heat index, based on the NCEP/GFS, ECMWF and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



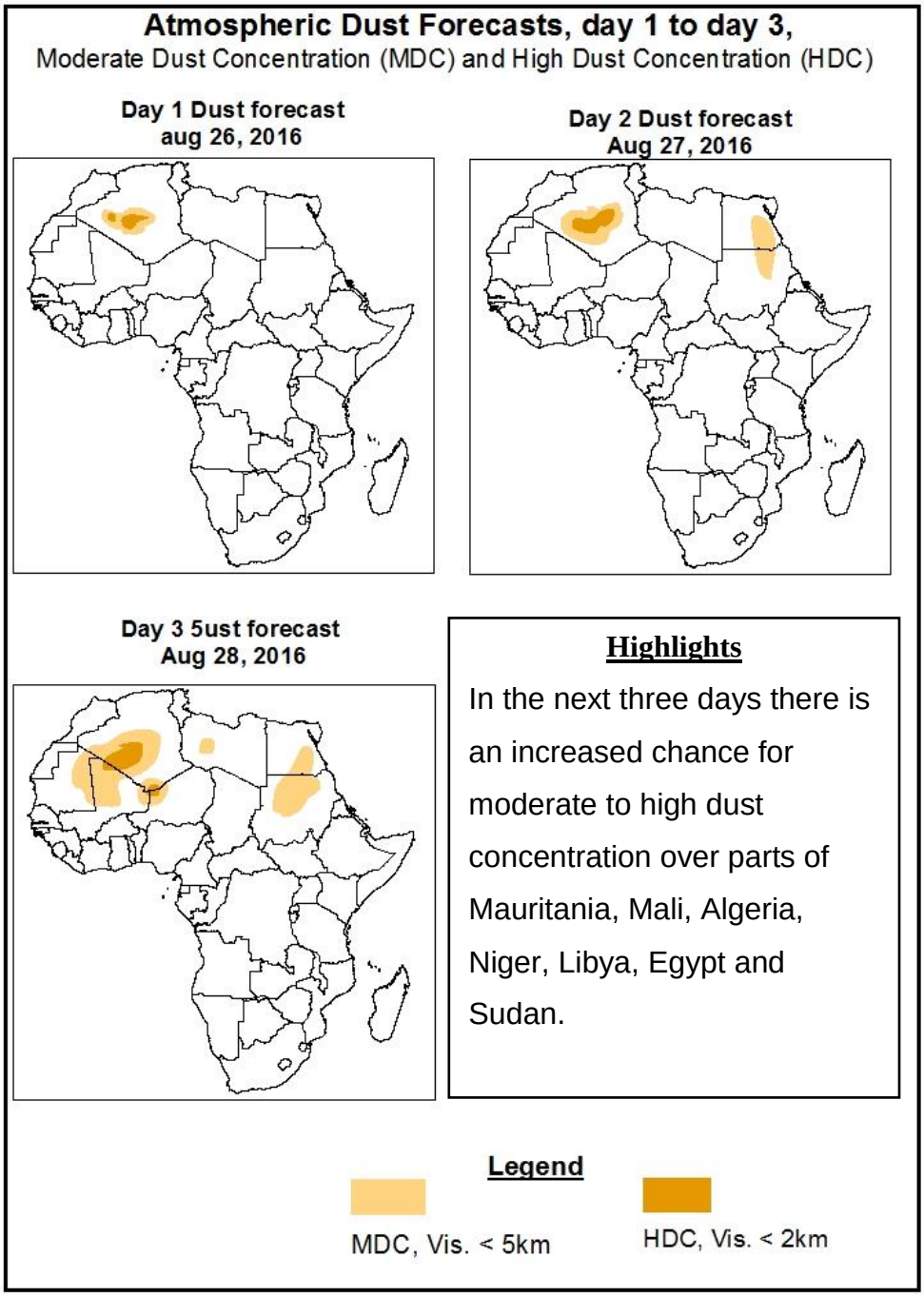


Highlights

In the next five days, westward propagating lower-level cyclonic systems across West Africa and central Sahel and lower level wind convergences across the Greater Horn of Africa are expected to enhance rainfall in their respective regions. Therefore, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Senegal, much of, Guinea Bissau, Guinea, Sierra Leone and Liberia, portions of Mali, local areas in Southern Mauritania, much of Burkina Faso and Nigeria, portions of Cote d'Ivoire, Ghana, Togo, Benin, Niger, and Chad, much of Cameroon and CAR, local areas in Sudan, portions of Ethiopia, Eritrea, DRC, Congo and Gabon.

1.2. ***Atmospheric Dust Concentration Forecasts (****valid: Aug 26– Aug 28 2016****)***

The forecasts are expressed in terms of high probability of dust concentration, based on the Navy Aerosol Analysis and Prediction System, NCEP/GFS lower-level wind forecasts and expert assessment.



1.3. Model Discussion, *Valid: Aug 26 –Aug 30, 2016*

The Azores high pressure system over the North Atlantic is expected to maintain, with a central pressure value ranging from 1023hPa to 1026 hPa during the forecast period.

The high pressure system St. Helena on the southeast of the Atlantic Ocean is expected intensify, with its value of the central pressure increasing from 1025 hPa to 1034 hPa during the forecast period.

The Mascarene High pressure system over the Southeast Atlantic Ocean is expected to intensify, with its value of the central pressure increasing from 1030 hPa to 1038 hPa from 24 hours to 72 hours and tends to weaken, with its value of central pressure decreasing from 1038 hPa to 1034 hPa between 96 hours to 120 hours.

The 1016mb isobar, associated with the East African ridge is expected to remain near the latitudes of northern Ethiopia during the forecast period.

The heat low over Western Sahel is expected to maintain, with an average central pressure value of 1026hPa from 24 hours to 96 hours and tend to fill up, with its central pressure value increasing from 1006 hPa to 1012 hPa from 96 hours to 120 hours. The heat low over Central Sahel is expected to fill up, with its central pressure value increasing from 1008 hPa to 1010 hPa during the forecast period. The heat low over Sudan is expected to weaken, with its central pressure value decreasing from 1008 hPa to 1006 hPa during the forecast period.

At 925hPa, strong dry to northerly northeasterly winds may lead to moderate to high dust concentration in parts of In the next three days there is an increased chance for moderate to high dust concentration over parts of Mauritania, Mali, Algeria, Niger, Libya, Egypt and Sudan.

At 850hPa level, a cyclonic circulation is expected to propagate westwards in the region between Chad and Senegal through the West African Region during the forecast period, while the lower level wind convergence is expected to prevail in the Greater Horn of Africa.

A trough in the easterlies is expected to propagate westwards across the western between southern Chad and Southern Senegal during the forecast period.

At 500 hPa, a zone of strong wind (>35kts), associated with AEJ is expected to expected to propagate westwards across in the region between Border Niger/Nigeria and Senegal.

At 150 hPa A strong wind (> 70 kts), associated with the TEJ is also expected to remain weak over the Greater Horn of Africa during the forecast period.

In the next five days, westward propagating lower-level cyclonic systems across West Africa and central Sahel and lower level wind convergences across the Greater Horn of Africa are expected to enhance rainfall in their respective regions. Therefore, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Senegal, much of, Guinea Bissau, Guinea, Sierra Leone and Liberia, portions of Mali, local areas in Southern Mauritania, much of Burkina Faso and Nigeria, portions of Cote d'Ivoire, Ghana, Togo, Benin, Niger, and Chad, much of Cameroon and CAR, local areas in Sudan, portions of Ethiopia, Eritrea, DRC, Congo and Gabon.

There is an increased chance for maximum heat index to exceed 40^{o}C over portions of Mauritania, Mali and Sudan.

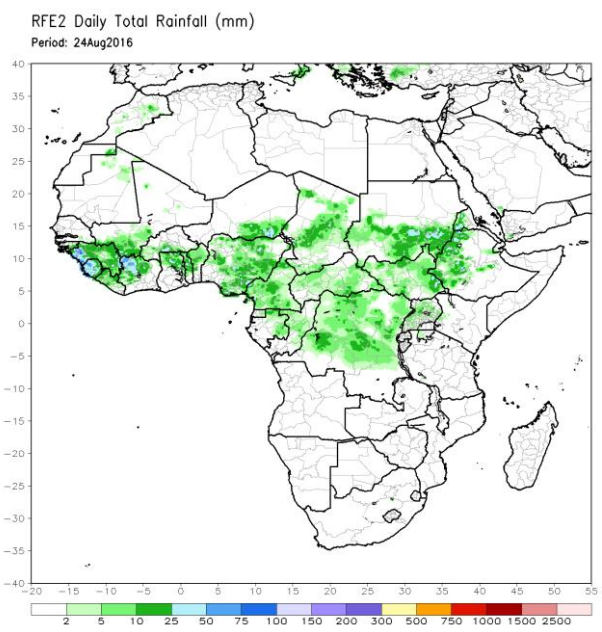
2.0. Previous and Current Day Weather over Africa

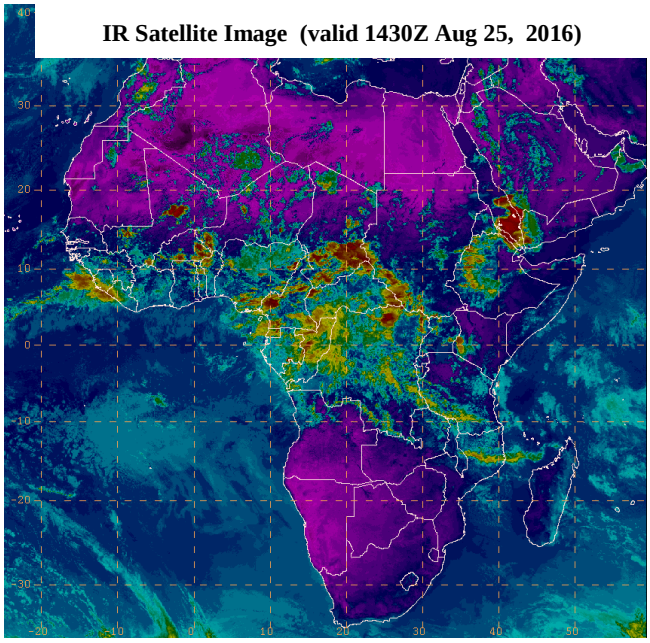
2.1. Weather assessment for the previous day (Aug 24, 2016)

Moderate to locally heavy rainfall was observed over portions of Guinea, Sera Leone and Cote d'Ivoire, local areas in Burkina Faso, Ghana Niger and Nigeria, portion of Great Horn of Africa.

2.2. Weather assessment for the current day (Aug 25, 2016**)**

Intense convective clouds are observed over portions of Sera Leone and Guinea, local areas in Mali, portion of Burkina Faso, local areas in Nigeria and portions of Central Africa and Great horn of Africa





Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (right) based on IR Satellite image.

Author: Alfred DANGO, (Burkina-Meteo) / CPC-African Desk); Alfred.Dango@noaa.gov